

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GB2004017PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/FR2005/050065	International filing date (<i>day/month/year</i>) 03.02.2005	Priority date (<i>day/month/year</i>) 05.02.2004
International Patent Classification (IPC) or national classification and IPC . G02F1/155, B60J3/04		
Applicant SAINT-GOBAIN GLASS FRANCE		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2005/050065

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-20 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-18 as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/1 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2005/050065

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>6, 8-12, 14, 17, 18</u>	YES
		Claims <u>1-5, 7, 13, 15, 16</u>	NO
	Inventive step (IS)	Claims <u>17</u>	YES
		Claims <u>1-12, 13-16, 18</u>	NO
	Industrial applicability (IA)	Claims <u>1-18</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
1.	Cited documents		
	<p>The following documents cited in the international search report are mentioned in the present report. The numbering given below will be used throughout the rest of the procedure.</p> <p>D1: EP-A-0 408 427 (SAINT-GOBAIN VITRAGE INTERNATIONAL) 16 January 1991 (1991-01-16)</p> <p>D2: FR-A-2 811 778 (SAINT-GOBAIN GLASS FRANCE) 18 January 2002 (2002-01-18)</p> <p>D3: WO 93/04885 A (ROBERT BOSCH GMBH) 18 March 1993 (1993-03-18)</p>		
2.	Novelty		
	<p>The present application fails to meet the requirements of PCT Article 33(2), since the subject matter of claims 1 to 5, 7, 13 and 15 is not novel.</p>		
3.1	Claim 1		
	<p>D1 describes:</p> <p>transparent glazing (figure 1) capable of being darkened, which includes an active electrochromic element (7, 8 and 9) between two surface electrodes (2, 5), the assembly being arranged such that, when a</p>		

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	<p>voltage is applied to the electrodes by means of their connectors (3, 6, 6'), the darkening of the element starts at one edge of the active element and spreads continuously over the surface thereof until the element becomes completely uniformly coloured (column 4, lines 44 to 51).</p> <p>Consequently, D1 anticipates the subject matter of claim 1, which is therefore not novel.</p> <p>3.2 Claim 15</p> <p>D1 (column 4, lines 7 to 32) describes a method for controlling an electrochromic element, which consists in applying an electrical potential between the electrodes of the said element and thereby inducing the darkening thereof. This is a method for controlling any electrochromic element, which can be applied without any modification to an element such as the one described in the present application. The subject matter of claim 15 is therefore not novel.</p> <p>3.3 Claims 2 to 5, 7, 13 and 16</p> <p>D1 further describes connecting conductors (6, 6') having low ohmic resistance, located either side of the functional element and suitable for having specific potentials applied to them. The active element extends along one edge of the glazing (figure 1) and in the field of view of the glazing; darkening starts along said edge (column 4, lines 44 to 51) and a connecting conductor (6') is placed along said edge.</p> <p>Furthermore, the glazing described in D1 has two contact areas (6, 6') for a surface electrode (5) extending along two opposite edges of the glazing,</p>

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>forming an angle with an edge of the glazing from which the electrochromic element extends. A frame forming an opaque border (column 2, lines 43 to 44) is also present on the glazing described.</p> <p>The subject matter of claims 2 to 5, 7, 13 and 16 is therefore not novel either.</p> <p>4. Inventive step</p> <p>The present application fails to meet the requirements of PCT Article 33(3), since the subject matter of claims 6 and 8 to 12, 14 and 18 does not involve an inventive step.</p> <p>4.1 Claims 6 and 8 to 12</p> <p>D2 describes laminated glazing comprising an electrochromic element in which fine metal wires (4) placed in the field of view of glazing are used for connecting one of the surface electrodes (the upper conductive layer). Furthermore, in the device described in D2, the functional element (3) is only formed on one portion of the lower surface electrode (2), the lateral strips of which are not covered by the electrochromic device (S₁, S₂, S₃ and S₄); said lateral strips are in mutually electrically separated pairs (S₁ and S₂ are isolated from S₃ and S₄) and support conductors (7, 8) for supplying electrical power to the two surface electrodes. The two electrodes have different surface resistances (two different materials, cf. page 15, line 31 to page 16, line 6 and page 16, lines 17 to 19), the lower electrode (the closest to the substrate) has a lower surface resistance (the resistance of the double layer being lower than that of a finer layer of ITO).</p>

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2005/050065

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>Consequently, taking D2, which is considered to be the closest prior art, as the starting point and combining it with D1, a person skilled in the art would arrive at the subject matter of claims 6 and 8 to 12.</p>
4.2	<p>Claims 14 and 18</p> <p>The use of glazing comprising an electrochromic element on a portion of its surface as a vehicle windscreen is well known to a person skilled in the art (see for example d3). This technical feature therefore cannot constitute the basis for an inventive step.</p>
4.3	<p>Claim 17</p> <p>This claim proposes a method for controlling an electrochromic device in which the device is powered via two power supply connections having different (opposite) positions on one of the electrodes of the device, thus enabling one power supply connection to be used for coloration, so that coloration occurs in a predetermined direction, and the other for fading the colour of the device, so that fading occurs in a direction different from (opposite to) the first. The coloration and fading of the device achieved by this method has the effect of a curtain that is unrolled and then rolled back. The cited prior art describes neither such an effect nor the technical features required for its achievement. Consequently, the subject matter of claim 17 is inventive.</p>

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The device proposed as an embodiment of the invention does not appear to have all the technical features required for implementing the invention. Indeed, electrode 2E is electrically powered by conductive strips 14 and 16 via wires 18. The presence of highly conductive wires on the surface of the electrode appears to contribute to the fact that a potential as uniform as possible is applied to said electrode. Electrode 4 is supplied by two conductive strips 12 and 20 located either side of (above and below) the electrode. Furthermore, the surface resistance of electrode 2E is ten times greater than that of electrode 4, which means that the electrical potential "spreads" more quickly in electrode 4 than in electrode 2E. It therefore appears that, when a voltage is applied in a device as described, coloration would start along the wires 18 to then spread gradually over the entire surface. The desired technical effect, i.e. that of a curtain unrolling, would not be obtained. As a result, claims 1 to 18 lack clarity.